WHAT IS CLAIMED IS:

1. A method for multi-objective portfolio optimization for use in investment decisions based on competing objectives and a plurality of constraints constituting a portfolio problem in a space, the method comprising:

generating a set of solutions of portfolio allocations in the space, the space having a plurality of dimensions;

selecting a first dimension from the plurality of dimensions, the first dimension being a dimension under consideration;

dividing the space into bins based on each dimension in the plurality of dimensions other than the dimension under consideration;

determining a respective point in each bin with the most extreme value in the dimension under consideration;

determining, based on the point in each bin with the most extreme value, whether other points in the space are dominant or dominated; and

removing the dominated points from further consideration, so as to result in a reduced set of solutions, the reduced set of solutions being used in investment decisioning.

2. The method of claim 1, the method further including, after removing the dominated points from further consideration:

selecting a second dimension from the plurality of dimensions, the second dimension being a second dimension under consideration;

dividing the space into bins based on each dimension in the plurality of dimensions other than the second dimension under consideration;

determining a respective point in each bin with the most extreme value in the second dimension under consideration;

determining, based on the point in each bin with the most extreme value in the second dimension under consideration, whether other points in the space are dominant or dominated; and

removing the dominated points from further consideration, so as to result in a further reduced set of solutions.

3. The method of claim 1, wherein the plurality of dimensions is two-dimensions, and the bins are in the form of strips in the space.

4. The method of claim 1, wherein the plurality of dimensions is three-dimensions, and the bins are in the form of rectangles in the space.

5. The method of claim 1, wherein the plurality of dimensions is four-dimensions, and the bins are in the form of hexahedra in the space.

6. The method of claim 1, wherein the plurality of dimensions is n-dimensions, and the bins are in the form of n-1 dimensional polyhedra in the space.

7. The method of claim 1 further including performing a final dominance check on the further reduced set of solutions.

8. The method of claim 1, further including converting the set of solutions to a maximization problem; and

wherein the most extreme value is the greatest value in each bin in the dimension under consideration.

9. The method of claim 8, wherein the converting the set of solutions to a maximization problem is performed by multiplying the value of each minimization objective by -1.

10. The method of claim 1, further including converting the set of solutions to a minimization problem; and

wherein the most extreme value is the minimum value in each bin in the dimension under consideration.

11. The method of claim 1, wherein the competing objectives include risk and return.

12. The method of claim 1, further including, after obtaining the reduced set of solutions, progressing through the remainder of the plurality of dimensions taking each dimension as the dimension under consideration in turn, in conjunction with binning in the space based on each and every dimension not under consideration.

13. The method of claim 12, wherein the coarseness of the binning is decreased as further dimensions are considered as the dimension under consideration.

14. The method of claim 1, wherein the dominant points are retained for processing with a further dimension under consideration.

15. The method of claim 1, wherein the method constitutes a space decomposition based dominance filtering process.

16. The method of claim 1, wherein the generating a set of solutions of portfolio allocations includes the generation of an efficient frontier.

17. The method of claim 1, wherein the generating a set of solutions of portfolio allocations includes using an evolutionary algorithm to generate an efficient frontier.

18. The method of claim 1, wherein the determining, based on the point in each bin with the most extreme value, whether other points in the space are dominant or dominated includes using a definition of Pareto dominance that extends to include uncertainty in the measurement of the objectives.

19. A system for multi-objective portfolio optimization for use in investment decisions based on competing objectives and a plurality of constraints constituting a portfolio problem in a space, the system comprising:

a population generation portion that generates a set of solutions of portfolio allocations in the space, the space having a plurality of dimensions;

a dominance filtering portion that selects a first dimension from the plurality of dimensions, the first dimension being a dimension under consideration, the dominance filtering portion:

dividing the space into bins based on each dimension in the plurality of dimensions other than the dimension under consideration;

determining a respective point in each bin with the most extreme value in the dimension under consideration;

determining, based on the point in each bin with the most extreme value, whether other points in the space are dominant or dominated; and

removing the dominated points from further consideration, so as to result in a reduced set of solutions, the reduced set of solutions being used in investment decisioning.

20. The system of claim 19, the dominance filtering portion, after removing the dominated points from further consideration:

selecting a second dimension from the plurality of dimensions, the second dimension being a second dimension under consideration;

dividing the space into bins based on each dimension in the plurality of dimensions other than the second dimension under consideration;

determining a respective point in each bin with the most extreme value in the second dimension under consideration;

determining, based on the point in each bin with the most extreme value in the second dimension under consideration, whether other points in the space are dominant or dominated; and

removing the dominated points from further consideration, so as to result in a further reduced set of solutions.

21. The system of claim 19, wherein the plurality of dimensions is four-dimensions, and the bins are in the form of hexahedra in the space.

22. The method of claim 19, wherein the plurality of dimensions is n-dimensions, and the bins are in the form of n-1 dimensional polyhedra in the space.

23. The system of claim 19, further including, after obtaining the reduced set of solutions, progressing through the remainder of the plurality of dimensions taking each dimension as the dimension under consideration in turn, in conjunction with binning in

the space based on all the dimensions not under consideration, until each dimension has been considered, so as to provide a further reduced set of solutions.

24. The system of claim 23, wherein, after each dimension has been considered, the dominance filtering portion performing a final dominance check on the further reduced set of solutions.

25. A computer readable medium for multi-objective portfolio optimization for use in investment decisions based on competing objectives and a plurality of constraints constituting a portfolio problem in a space, the computer readable medium comprising:

a first portion that generates a set of solutions of portfolio allocations in the space, the space having a plurality of dimensions;

a second portion that selects a first dimension from the plurality of dimensions, the first dimension being a dimension under consideration, the second portion:

dividing the space into bins based on each dimension in the plurality of dimensions other than the dimension under consideration;

determining a respective point in each bin with the most extreme value in the dimension under consideration;

determining, based on the point in each bin with the most extreme value, whether other points in the space are dominant or dominated; and

removing the dominated points from further consideration, so as to result in a reduced set of solutions, the reduced set of solutions being used in investment decisioning.

26. A method for multi-objective portfolio optimization for use in investment decisions based on competing objectives and a plurality of constraints constituting a portfolio problem in a space, the method comprising:

generating a set of solutions of portfolio allocations in the space, the space having a plurality of dimensions;

selecting a first dimension from the plurality of dimensions, the first dimension being a dimension under consideration;

dividing the space into bins based on each dimension in the plurality of dimensions other than the dimension under consideration;

determining a respective point in each bin with the most extreme value in the dimension under consideration;

determining, based on the point in each bin with the most extreme value, whether other points in the space are dominant or dominated; and

removing the dominated points from further consideration, so as to result in a reduced set of solutions, the reduced set of solutions being used in investment decisioning;

and the method further including, after removing the dominated points from further consideration:

selecting a second dimension from the plurality of dimensions, the second dimension being a second dimension under consideration;

dividing the space into bins based on each dimension in the plurality of dimensions other than the second dimension under consideration;

determining a respective point in each bin with the most extreme value in the second dimension under consideration;

determining, based on the point in each bin with the most extreme value in the second dimension under consideration, whether other points in the space are dominant or dominated; and

removing the dominated points from further consideration, so as to result in a further reduced set of solutions; and

wherein the competing objectives include risk and return.